



DEPARTMENT OF THE AIR FORCE  
59TH MEDICAL WING (AETC)  
JOINT BASE SAN ANTONIO - LACKLAND TEXAS

3 MAR 2017

MEMORANDUM FOR SGVU  
ATTN: JOSHUA CALCOTE

FROM: 59 MDW/SGVU

SUBJECT: Professional Presentation Approval

1. Your paper, entitled 59<sup>th</sup> Medical Wing Clinical Research Division Clinical Investigations Program Posters (Count: 16 of Varying Topics) presented at/published to Hanging in the Hallways at the 59<sup>th</sup> Medical Wing Clinical Research Division, Bldg 4430 in accordance with MDWI 41-108, has been approved and assigned local file #17110.
2. Pertinent biographic information (name of author(s), title, etc.) has been entered into our computer file. Please advise us (by phone or mail) that your presentation was given. At that time, we will need the date (month, day and year) along with the location of your presentation. It is important to update this information so that we can provide quality support for you, your department, and the Medical Center commander. This information is used to document the scholarly activities of our professional staff and students, which is an essential component of Wilford Hall Ambulatory Surgical Center (WHASC) internship and residency programs.
3. Please know that if you are a Graduate Health Sciences Education student and your department has told you they cannot fund your publication, the 59th Clinical Research Division may pay for your basic journal publishing charges (to include costs for tables and black and white photos). We cannot pay for reprints. If you are 59 MDW staff member, we can forward your request for funds to the designated wing POC.
4. Congratulations, and thank you for your efforts and time. Your contributions are vital to the medical mission. We look forward to assisting you in your future publication/presentation efforts.

Linda Steel-Goodwin

LINDA STEEL-GOODWIN, Col, USAF, BSC  
Director, Clinical Investigations & Research Support

## PROCESSING OF PROFESSIONAL MEDICAL RESEARCH/TECHNICAL PUBLICATIONS/PRESENTATIONS

### INSTRUCTIONS

#### USE ONLY THE MOST CURRENT 59 MDW FORM 3039 LOCATED ON AF E-PUBLISHING

1. The author must complete page two of this form:
  - a. In Section 2, add the funding source for your study [e.g., 59 MDW CRD Graduate Health Sciences Education (GHSE) (SG5 O&M); SG5 R&D; Tri-Service Nursing Research Program (TSNRP); Defense Medical Research & Development Program (DMRDP); NIH; Congressionally Directed Medical Research Program (CDMRP); Grants; etc.]
  - b. In Section 2, there may be funding available for journal costs, if your department is not paying for figures, tables or photographs for your publication. Please state "YES" or "NO" in Section 2 of the form, if you need publication funding support.
2. Print your name, rank/grade, sign and date the form in the author's signature block or use an electronic signature.
3. Attach a copy of the 59 MDW IRB or IACUC approval letter for the research related study. If this is a technical publication/presentation, state the type (e.g. case report, QA/QI study, program evaluation study, informational report/briefing, etc.) in the "Protocol Title" box.
4. Attach a copy of your abstract, paper, poster and other supporting documentation.
5. Save and forward, via email, the processing form and all supporting documentation to your unit commander, program director or immediate supervisor for review/approval.
6. On page 2, have either your unit commander, program director or immediate supervisor:
  - a. Print their name, rank/grade, title; sign and date the form in the approving authority's signature block or use an electronic signature.
7. Submit your completed form and all supporting documentation to the CRD for processing (59crdpubspres@us.af.mil). **This should be accomplished no later than 30 days before final clearance is required to publish/present your materials.** If you have any questions or concerns, please contact the 59 CRD/Publications and Presentations Section at 292-7141 for assistance.
8. The 59 CRD/Publications and Presentations Section will route the request form to clinical investigations, 502 ISG/JAC (Ethics Review) and Public Affairs (59 MDW/PA) for review and then forward you a final letter of approval or disapproval.
9. Once your manuscript, poster or presentation has been approved for a one-time public release, you may proceed with your publication or presentation submission activities, as stated on this form. **Note:** For each new release of medical research or technical information as a publication/presentation, a new 59 MDW Form 3039 must be submitted for review and approval.
10. If your manuscript is accepted for scientific publication, please contact the 59 CRD/Publications and Presentations Section at 292-7141. This information is reported to the 59 MDW/CC. All medical research or technical information publications/presentations must be reported to the Defense Technical Information Center (DTIC). See 59 MDWI 41-108, *Presentation and Publication of Medical and Technical Papers*, for additional information.
11. The Joint Ethics Regulation (JER) DoD 5500.07-R, *Standards of Conduct*, provides standards of ethical conduct for all DoD personnel and their interactions with other non-DoD entities, organizations, societies, conferences, etc. Part of the Form 3039 review and approval process includes a legal ethics review to address any potential conflicts related to DoD personnel participating in non-DoD sponsored conferences, professional meetings, publication/presentation disclosures to domestic and foreign audiences, DoD personnel accepting non-DoD contributions, awards, honoraria, gifts, etc. The specific circumstances for your presentation will determine whether a legal review is necessary. **If you (as the author) or your supervisor check "NO" in block 17 of the Form 3039, your research or technical documents will not be forwarded to the 502 ISG/JAC legal office for an ethics review.** To assist you in making this decision about whether to request a legal review, the following examples are provided as a guideline:

For presentations before professional societies and like organizations, the 59 MDW Public Affairs Office (PAO) will provide the needed review to ensure proper disclaimers are included and the subject matter of the presentation does not create any cause for DoD concern.

If the sponsor of a conference or meeting is a DoD entity, an ethics review of your presentation is not required, since the DoD entity is responsible to obtain all approvals for the event.

If the sponsor of a conference or meeting is a non-DoD commercial entity or an entity seeking to do business with the government, then your presentation should have an ethics review.

If your travel is being paid for (in whole or in part) by a non-Federal entity (someone other than the government), a legal ethics review is needed. These requests for legal review should come through the 59 MDW Gifts and Grants Office to 502 ISG/JAC.

If you are receiving an honorarium or payment for speaking, a legal ethics review is required.

If you (as the author) or your supervisor check "YES" in block 17 of the Form 3039, your research or technical documents will be forwarded simultaneously to the 502 ISG/JAC legal office and PAO for review to help reduce turn-around time. If you have any questions regarding legal reviews, please contact the legal office at (210) 671-5795/3365, DSN 473.

**NOTE:** All abstracts, papers, posters, etc., should contain the following disclaimer statement:

***"The views expressed are those of the [author(s)] [presenter(s)] and do not reflect the official views or policy of the Department of Defense or its Components"***

**NOTE:** All abstracts, papers, posters, etc., should contain the following disclaimer statement for research involving humans:

***"The voluntary, fully informed consent of the subjects used in this research was obtained as required by 32 CFR 219 and DODI 3216.02\_AFI 40-402."***

**NOTE:** All abstracts, papers, posters, etc., should contain the following disclaimer statement for research involving animals, as required by AFMAN 40-401\_IP :

***"The experiments reported herein were conducted according to the principles set forth in the National Institute of Health Publication No. 80-23, Guide for the Care and Use of Laboratory Animals and the Animal Welfare Act of 1966, as amended."***



PROCESSING OF PROFESSIONAL MEDICAL RESEARCH/TECHNICAL PUBLICATIONS/PRESENTATIONS					
1. TO: CLINICAL RESEARCH		2. FROM: (Author's Name, Rank, Grade, Office Symbol) Calcote, Joshua - Contractor, 59 MDW/SGVU		3. GME/GHSE STUDENT: <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
				4. PROTOCOL NUMBER: N/A	
5. PROTOCOL TITLE: ( <b>NOTE:</b> For each new release of medical research or technical information as a publication/presentation, a new 59 MDW Form 3039 must be submitted for review and approval.)  N/A					
6. TITLE OF MATERIAL TO BE PUBLISHED OR PRESENTED: 59th Medical Wing Clinical Research Division Clinical Investigations Program Posters (Count: 16 of varying topics)					
7. FUNDING RECEIVED FOR THIS STUDY? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO FUNDING SOURCE:					
8. DO YOU NEED FUNDING SUPPORT FOR PUBLICATION PURPOSES: <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO					
9. IS THIS MATERIAL CLASSIFIED? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO					
10. IS THIS MATERIAL SUBJECT TO ANY LEGAL RESTRICTIONS FOR PUBLICATION OR PRESENTATION THROUGH A COLLABORATIVE RESEARCH AND DEVELOPMENT AGREEMENT (CRADA), MATERIAL TRANSFER AGREEMENT (MTA), INTELLECTUAL PROPERTY RIGHTS AGREEMENT ETC.? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <b>NOTE:</b> If the answer is YES then attach a copy of the Agreement to the Publications/Presentations Request Form.					
11. MATERIAL IS FOR: <input checked="" type="checkbox"/> DOMESTIC RELEASE <input type="checkbox"/> FOREIGN RELEASE CHECK APPROPRIATE BOX OR BOXES FOR APPROVAL WITH THIS REQUEST. ATTACH COPY OF MATERIAL TO BE PUBLISHED/PRESENTED. <input type="checkbox"/> 11a. PUBLICATION/JOURNAL (List intended publication/journal.)  <input type="checkbox"/> 11b. PUBLISHED ABSTRACT (List intended journal.)  <input checked="" type="checkbox"/> 11c. POSTER (To be demonstrated at meeting: name of meeting, city, state, and date of meeting.) For hanging in the hallways of the 59th Medical Wing Clinical Research Division, Bldg 4430 <input type="checkbox"/> 11d. PLATFORM PRESENTATION (At civilian institutions: name of meeting, state, and date of meeting.)  <input type="checkbox"/> 11e. OTHER (Describe: name of meeting, city, state, and date of meeting.)					
12. HAVE YOUR ATTACHED RESEARCH/TECHNICAL MATERIALS BEEN PREVIOUSLY APPROVED TO BE PUBLISHED/PRESENTED? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO ASSIGNED FILE # _____ DATE _____					
13. EXPECTED DATE WHEN YOU WILL NEED THE CRD TO SUBMIT YOUR CLEARED PRESENTATION/PUBLICATION TO DTIC <b>NOTE:</b> All publications/presentations are required to be placed in the Defense Technical Information Center (DTIC). DATE N/A					
14. 59 MDW PRIMARY POINT OF CONTACT (Last Name, First Name, M.I., email) Calcote, Joshua C. - joshua.c.calcote.ctr@mail.mil				15. DUTY PHONE/PAGER NUMBER 210-292-7143	
16. AUTHORSHIP AND CO-AUTHOR(S) List in the order they will appear in the manuscript.					
LAST NAME, FIRST NAME AND M.I.		GRADE/RANK		SQUADRON/GROUP/OFFICE SYMBOL	
a. Primary/Corresponding Author Joshua C. Calcote		Contractor		59 MDW/SGVU	
b.					
c.					
d.					
e.					
17. IS A 502 ISG/JAC ETHICS REVIEW REQUIRED (JER DOD 5500.07-R)? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO					
I CERTIFY ANY HUMAN OR ANIMAL RESEARCH RELATED STUDIES WERE APPROVED AND PERFORMED IN STRICT ACCORDANCE WITH 32 CFR 219, AFMAN 40-401_IP, AND 59 MDWI 41-108. I HAVE READ THE FINAL VERSION OF THE ATTACHED MATERIAL AND CERTIFY THAT IT IS AN ACCURATE MANUSCRIPT FOR PUBLICATION AND/OR PRESENTATION.					
18. AUTHOR'S PRINTED NAME, RANK, GRADE Dr. Joshua C. Calcote, Contractor			19. AUTHOR'S SIGNATURE <small>(Signature required for all CRDs. A signature is required for all CRDs. The author must be a commissioned officer, captain, warrant officer, or chief petty officer. Do not sign if you are not a commissioned officer, captain, warrant officer, or chief petty officer.)</small> GRANT.EARL.JR.1126544380		20. DATE February 22, 2017
21. APPROVING AUTHORITY'S PRINTED NAME, RANK, TITLE Dr. Earl Grant, Jr., GS-14, DAF			22. APPROVING AUTHORITY'S SIGNATURE <small>(Signature required for all CRDs. A signature is required for all CRDs. The approving authority must be a commissioned officer, captain, warrant officer, or chief petty officer. Do not sign if you are not a commissioned officer, captain, warrant officer, or chief petty officer.)</small> GRANT.EARL.JR.1126544380		23. DATE February 23, 2017

<b>PROCESSING OF PROFESSIONAL MEDICAL RESEARCH/TECHNICAL PUBLICATIONS/PRESENTATIONS</b>		
<b>1st ENDORSEMENT (59 MDW/SGVU Use Only)</b>		
TO: Clinical Research Division 59 MDW/CRD Contact 292-7141 for email instructions.	24. DATE RECEIVED February 23, 2017	25. ASSIGNED PROCESSING REQUEST FILE NUMBER 17110
26. DATE REVIEWED 27 Feb 2017	27. DATE FORWARDED TO 502 ISG/JAC	
28. AUTHOR CONTACTED FOR RECOMMENDED OR NECESSARY CHANGES: <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES If yes, give date. _____ <input type="checkbox"/> N/A		
29. COMMENTS <input checked="" type="checkbox"/> APPROVED <input type="checkbox"/> DISAPPROVED The posters are approved.		
30. PRINTED NAME, RANK/GRADE, TITLE OF REVIEWER Rocky Calcote, PhD, Clinical Research Administrator	31. REVIEWER SIGNATURE <small>Digitally signed by ROCKY D. 1178245844            DN: cn=ROCKY D. 1178245844, o=59 MDW/CRD, ou=59 MDW/CRD, email=rocky.d.1178245844@59mdw.com, c=US            Date: 2017.02.23 14:08:47 -0800</small>	32. DATE
<b>2nd ENDORSEMENT (502 ISG/JAC Use Only)</b>		
33. DATE RECEIVED	34. DATE FORWARDED TO 59 MDW/PA	
35. COMMENTS <input type="checkbox"/> APPROVED (In compliance with security and policy review directives.) <input type="checkbox"/> DISAPPROVED		
36. PRINTED NAME, RANK/GRADE, TITLE OF REVIEWER	37. REVIEWER SIGNATURE	38. DATE
<b>3rd ENDORSEMENT (59 MDW/PA Use Only)</b>		
39. DATE RECEIVED February 27, 2017	40. DATE FORWARDED TO 59 MDW/SGVU March 02, 2017	
41. COMMENTS <input checked="" type="checkbox"/> APPROVED (In compliance with security and policy review directives.) <input type="checkbox"/> DISAPPROVED		
42. PRINTED NAME, RANK/GRADE, TITLE OF REVIEWER Kevin Iinuma, SSgt/E-5, 59 MDW Public Affairs	43. REVIEWER SIGNATURE <small>Digitally signed by KEVIN IINUMA 1296227            DN: cn=KEVIN IINUMA 1296227, o=59 MDW/PA, ou=59 MDW/PA, email=kevin.iinuma@59mdw.com, c=US            Date: 2017.03.02 11:01:51 -0800</small>	44. DATE March 02, 2017
<b>4th ENDORSEMENT (59 MDW/SGVU Use Only)</b>		
45. DATE RECEIVED	46. SENIOR AUTHOR NOTIFIED BY PHONE OF APPROVAL OR DISAPPROVAL <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> COULD NOT BE REACHED <input type="checkbox"/> LEFT MESSAGE	
47. COMMENTS <input type="checkbox"/> APPROVED <input type="checkbox"/> DISAPPROVED		
48. PRINTED NAME, RANK/GRADE, TITLE OF REVIEWER	49. REVIEWER SIGNATURE	50. DATE





# 59th Medical Wing Clinical Research Division

## CLINICAL INVESTIGATIONS PROGRAM

### SUPPORTED RESEARCH



**"Non-Human Research Subject Blood Donor Initiative"** – PI: Linda Harris – Author: Erica Dean

The Non-Human Research Subject Blood Donor Initiative, designed by the CRD, resulted in a significant reduction in the number of animals required to support trauma-related protocols. Use of this protocol in other Clinical Investigations Facilities could drastically reduce the number of animals required to support trauma- and resuscitation-focused research.

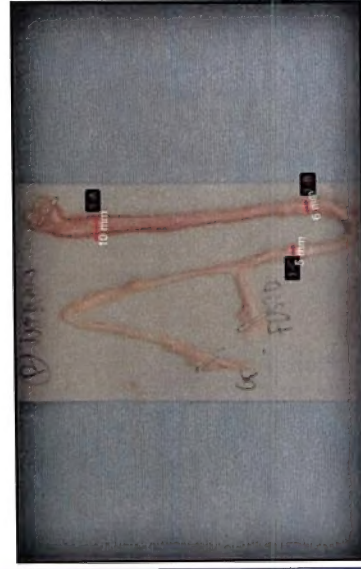


**"Use of Miniature Marshmallows to Reduce Stress, Enhance Safety, and Increase Efficiency When Working With Sinclair Miniature Swine"**

– PI: Linda Harris – Author: Erica Dean  
Sinclair Miniature Swine familiar with people and mini-marshmallows are easily trained to perform simple husbandry behaviors such as standing still or walking from one cage to another. These behaviors minimize the need for physical handling thereby reducing stress, decreasing procedure time, and enhancing safety.

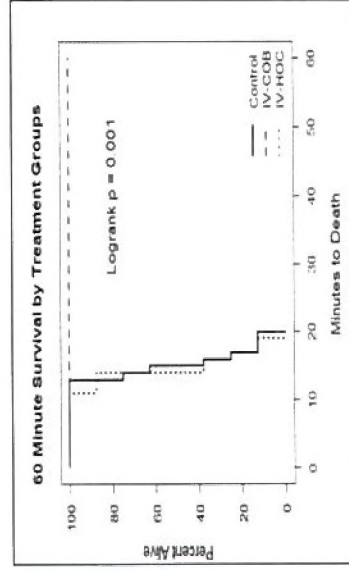


**"The Frequency of Fungal Culture Contamination in Normal Toenails versus Periodic Acid Schiff (PAS) and Gomori's Methenamine Silver (GMS) Stains in the Diagnosis of Onychomycosis"** – PI: Shannon McCann  
Onychomycosis is a common worldwide problem identified in 14% of the population. This study used cultures and special stains of toenail clippings to determine if contamination of toenail samples (before collection) are being misinterpreted as Onychomycosis, if age relates to the level of contamination, and what are the organisms isolated in the clinically normal toenails.



**"Tissue Sharing from the Aortic Balloon Occlusion and the Abdominal Aortic and Junctional Tourniquet in a Coagulopathic Model of Pelvic Hemorrhage in Swine Study"** – PI: Matthew Wordsworth

The purpose of this study is to map the nerve and better understand the anatomy of the swine before establishing and conducting future nerve studies (the nerve innervation may vary from strain to strain).



**"Efficacy of Intravenous cobinamide versus hydroxocobalamin or saline for treatment of severe hydrogen sulfide toxicity in a swine (*Sus Scrofa*) model"** – PI: Maj Joseph Maddry

Hydrogen sulfide ( $H_2S$ ) is a potentially deadly gas that naturally occurs in petroleum and natural gas. This study compared the time to spontaneous ventilation among groups of swine with acute  $H_2S$ -induced apnea treated with intravenous (IV) cobinamide, IV hydroxocobalamin, or saline. All of the cobinamide-treated animals survived, whereas, none of the control or hydroxocobalamin-treated animals survived.



**"Brain Magnetic Resonance Imaging (MRI) and Neuropathological Effects of Hypobaric Exposure to 30,000 Feet and Hyperoxic Exposure at Sea Level in Miniature Swine"** – PI: Col Paul Sherman

This study utilized miniature swine, a hypobaric chamber, and an MRI to safely and effectively demonstrate white matter injury (brain MRI changes) seen with high altitude (hypobaric) exposure in America's high altitude pilots and the observers who assist in the





# 59th Medical Wing Clinical Research Division

## CLINICAL INVESTIGATIONS PROGRAM

### LABORATORY BRANCH SUPPORT CAPABILITIES



## Cell Biology & Immunology

### Equipment:

- Dedicated BSL-2 Hoods
- Flow Cytometer
- Fluorescent Microscopy
- Confocal Microscopy
- Microdialysis Analysis
- Microplate Reader
- MagPix



### Capabilities:

- Tissue Culture
  - Proliferation-Viability
  - Cell Stain
- Fluorescent Microscopy/Image Analysis
- Analysis of Brain/Kidney Microdialysate
- Single-Plex/Multiplex Biomarker Detection/Quantification
- Cell Marker Detection/Identification







# 59th Medical Wing Clinical Research Division

## CLINICAL INVESTIGATIONS PROGRAM

### LABORATORY BRANCH SUPPORT CAPABILITIES



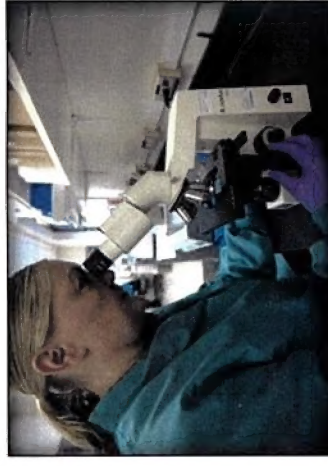
## Microbiology

### Equipment:

- VITEK Bacterial ID/Susceptibility System
- Aerobic/Anaerobic Incubators
- Laminar Flow Biological Safety Cabinet
- Bright Field Microscopy
- Electron Microscopy

### Capabilities:

- Aerobic & Anaerobic Bacterial Cultures
- Bacterial ID and Susceptibility
- Bacterial Adhesion Studies
- Disinfectant Reliability Studies
- Epidemiology Studies
- Comparison of Conventional & New Clinical Microbiology Methodologies







# 59th Medical Wing Clinical Research Division

## CLINICAL INVESTIGATIONS PROGRAM

### LABORATORY BRANCH SUPPORT CAPABILITIES



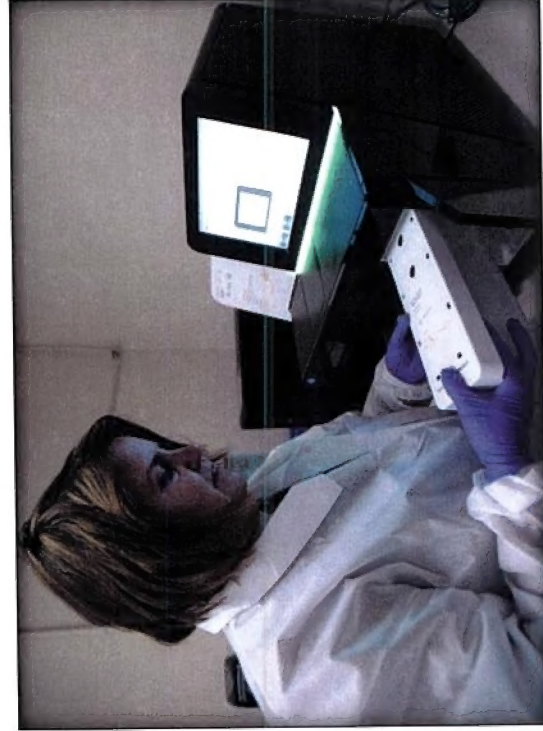
## Molecular Biology

### Equipment:

- Next Generation Sequencers
  - NextSeq 500
- Personal Genome Machine (PGM)
- Automated Extractor
- PCR & RT-PCR
- Pyro Sequencing
- Sanger Sequencing
- Ultrasonicator
- Fragment Analyzer
- Microarray

### Capabilities:

- Nucleic Acid Sequencing
  - Full Genome
  - Exome
  - Transcriptome
  - Multiplex-Targeted
  - Microbiome
- Genotyping/SNP Detection
- Nucleic Acid Fragmentation
- Nucleic Acid Quantification and Quality Assessment







# 59th Medical Wing Clinical Research Division CLINICAL INVESTIGATIONS PROGRAM LABORATORY BRANCH SUPPORT CAPABILITIES



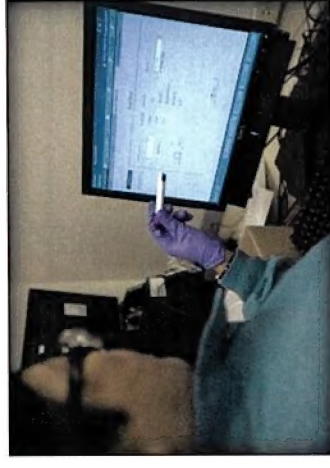
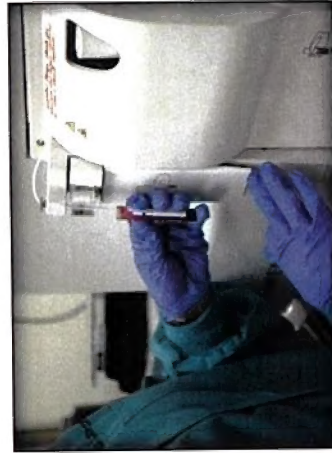
## Hematology & Hemostasis

### Equipment:

- CBC Analyzer (Human & Multispecies Capable)
- Coagulation Analyzers
  - STA-R Evolution Hemostasis System
  - Thromboelastograph Hemostasis Analyzers
  - ROTEM® Delta System

### Capabilities:

- Complete Blood Count
  - Platelet
  - Reticulocyte
  - Differential
- Routine/Specialty Coagulation Testing
  - PT/PTT/Fibrinogen
  - Clotting Time, Speed of Clot Formation, Clot Firmness







# 59th Medical Wing Clinical Research Division

## CLINICAL INVESTIGATIONS PROGRAM

### LABORATORY BRANCH SUPPORT CAPABILITIES



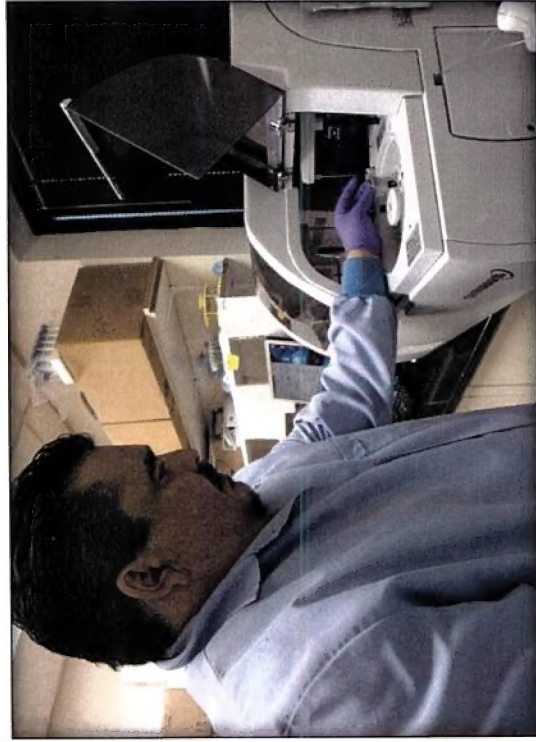
#### Equipment:

- High/Ultra Performance Liquid Chromatography
- Photodiode Array Detectors
- Fluorescent Detectors
- Clinical Chemistry Analyzer
- pH/ISE/Conductivity Meter
- Three-Liquid Chromatographic Triple Quadrupole Mass Spectrometers
- Two-Gas Chromatographic Mass Specs
- Solid Phase Extraction System

## Chemistry / Toxicology

#### Capabilities:

- Drug and Drug Metabolites
- Natural Product Chemistry
- Disease Predictors
- Medical Readiness Research
- Full range of Clinical Chemistry analyses on Various Sample Types
- High Sensitivity pH and Ion Monitoring
- Therapeutic Drug/Immune Suppressants
- Analgesics in Pain Management
- Toxic Compounds and Allergens







# Methylation Status of Genes via Pyrosequencing

# Methylation Status of Genes via Pyrosequencing

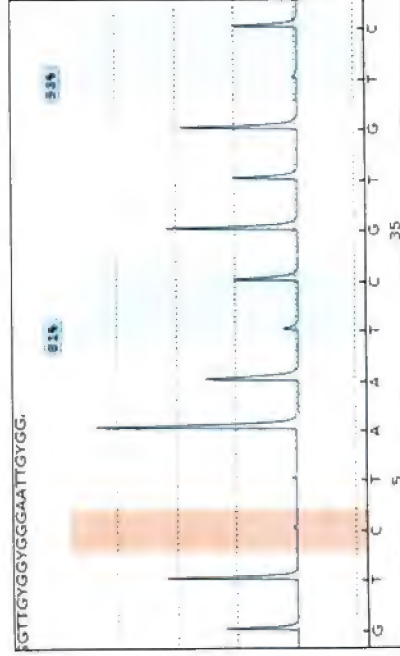
### Supported Project:

Capt Michael R. Hossack, MD

Dr. Thomas Gibbons      Dr. Jody Noe

Mr. Richard LaBoone

Geac  
SSN: CCG  
BINE  
Premiere Fund IV (3/25)  
Assay A  
1688  
789  
Assay B  
10  
Assay C  
485  
dw111276944297.747250



Sample ID	Well	Assay	ID	Internal Control (IT)	Internal Control (IC)	%diff/true conversion of control	Mean	Min	Max	SD
Low Cont	A5	BDFNF 08	L	150.12	0.32	4%	3%	3%	4%	0%
	A5	BDFNF 10	L	192.94	9.38	5%	3%	3%	8%	1%
	A1	NBRJC1 01	L	363.37	7.38	2%	4%	3%	6%	2%
	B5	NBRJC1 05	L	220.15	3.55	3%	3%	1%	5%	2%
	C5	NBRJC1 05	L	218.72	4.11	4%	4%	2%	8%	2%
High Cont	A6	BDFNF 08	H	183.44	6.38	3%	96%	95%	98%	1%
	A6	BDFNF 10	H	138.57	11.60	8%	95%	90%	100%	4%
	A2	NBRJC1 01	H	425.86	9.96	2%	92%	73%	98%	9%
	B6	NBRJC1 05	H	219.40	5.29	5%	89%	79%	93%	7%
	C6	NBRJC1 05	H	140.63	1.56	2%	90%	77%	97%	9%
P140011	A7	BDFNF 08	11	230.08	6.08	3%	5%	4%	6%	1%
	A7	BDFNF 10	11	403.64	6.03	3%	6%	4%	11%	3%
	A3	NBRJC1 01	11	280.96	7.76	2%	4%	2%	6%	2%
	B7	NBRJC1 05	11	151.78	1.92	2%	3%	2%	6%	2%
	B7	NBRJC1 05	11	151.78	1.92	2%	3%	2%	6%	2%

- Selecting regions of Genome
- Selecting/Designing of Primers
- Verification of Assays

- Collect & Extract DNA from Sample
- Bisulfite Conversion of DNA
- PCR Converted DNA
- Pyrosequence

- . Analyze/Interpret Data
- . Provide Data in Excel Format
- . Provide Materials & Methods for Publication of Research



# 59th Medical Wing Clinical Research Division

## CLINICAL INVESTIGATIONS PROGRAM

### SPOTLIGHT ON GME/GHSE-SUPPORTED RESEARCH



## Image Analysis via Laser Scanning Confocal Microscopy (LSCM)

### Supported Projects:

"MYC and BCL-2 Double Immunohistochemistry on Diffuse large B Cell Lymphoma" – PI: Maj Jean Coviello CRD Laboratory Support Staff: Ms. Lori Henrichs, Ms. Sally Banfield, and Dr. Thomas Gibbons  
"Expression of odorant receptors in non-olfactory neurons to induce selective axonal fasciculation" – PI: Maj Travis Newberry CRD Laboratory Support Staff: Ms. Patti Dixon and Dr. Thomas Gibbons

CRD Support: GME investigators request lab support to assess chromosomal abnormalities via FISH, abnormal protein production via IHC, and directed nerve innervation in tissue culture.



### A. Development:

- . Coordinate with CRD Histology for FFPE
- . Selecting FISH Probes
- . Selecting Primary/Secondary Antibodies
- . Optimization/Verification of Assays



### B. Performance:

- . Prepare Samples
- . Stain Samples
- . Image



### C. Dissemination:

- . Deliver Stained Slides to PI
- . Analyze/Interpret Data
- . Provide Materials & Methods for Publication of Research





## 59th Medical Wing Clinical Research Division

# CLINICAL INVESTIGATIONS PROGRAM

## SPOTLIGHT ON GME/GHSE-SUPPORTED RESEARCH



### "Saving the Unsurvivable with En Route Extracorporeal Membrane Oxygenation (ECMO)"

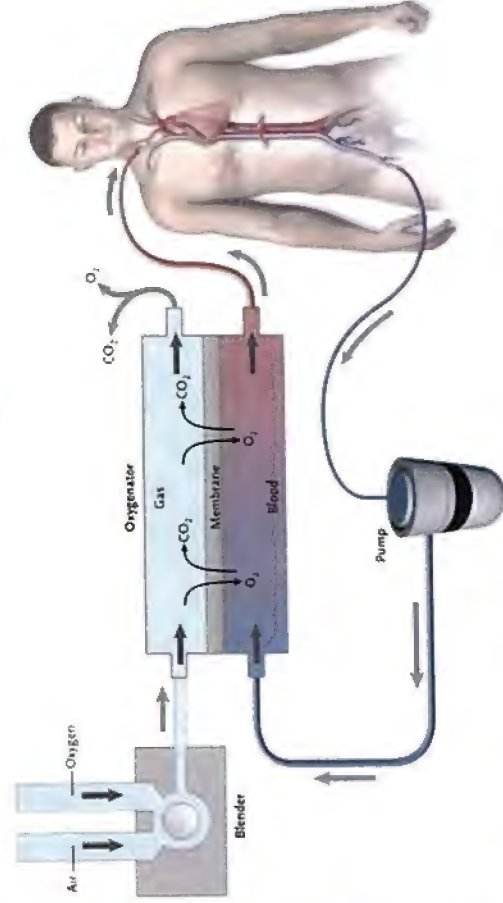
**Principal Investigator:**  
Maj Joseph Maddry, MD

**Associate Investigators:**  
Lt Col Phillip Mason  
Capt James Lantry  
Normalynn Garrett  
Shelia Savell, PhD, RN

#### Description:

This study will develop and provide an accelerated ECMO course to Military Critical Care Clinicians (MCCC) subjects and, subsequently, determine their ability to place ECMO intravascular catheters, initiate ECMO therapy in an ECMO patient, and troubleshoot common ECMO complications with and without teleconsultative support during transport of ECMO patients.

**CRD Support:** surgical suites; swine models; surgical technicians; pre/post-surgical care; animal housing; laboratory support





## 59th Medical Wing Clinical Research Division

# CLINICAL INVESTIGATIONS PROGRAM

## SPOTLIGHT ON GME/GHSE-SUPPORTED RESEARCH



### “Evaluation of Prehospital Uncontrolled Hemorrhage and Use of Medical Adjunct Therapies”

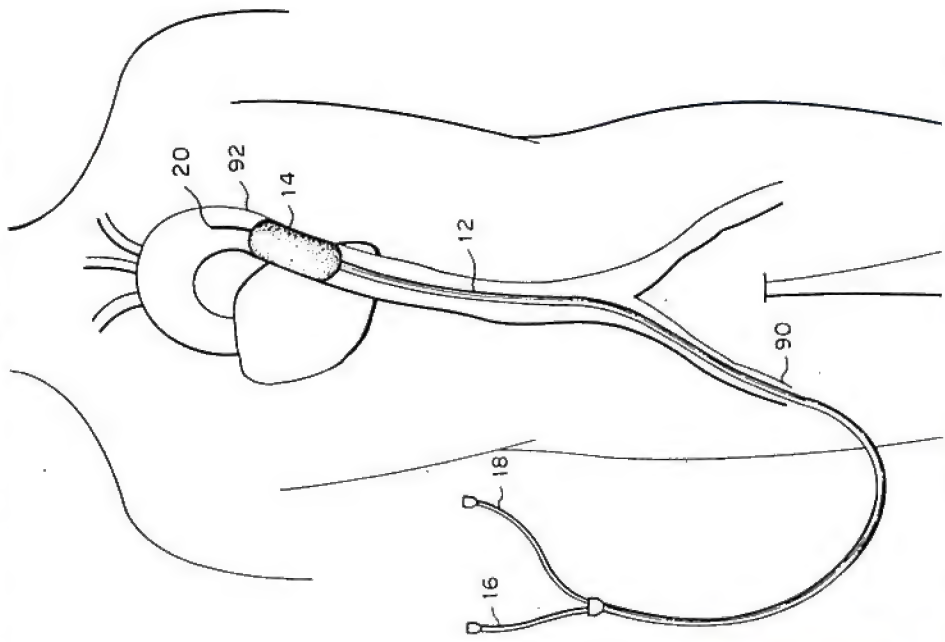
**Principal Investigator:**  
Jason Rall, PhD

**Associate Investigators:**  
Capt Kai Hata, MD  
Ed Chagoy  
Jennifer Cox

**Problem:** Hemorrhage is associated with greater than 90% of potentially survivable deaths on the battlefield. Survival from these injuries often leads to multiple organ failure and ischemic damage during evacuation to definitive medical care. Techniques for the control of hemorrhage and that protect patient vital organs during evacuation need to be improved.

This study is investigating if Selective Aortic Arch Perfusion (SAAP) can be used to treat both uncontrolled hemorrhage and be used to induce suspended animation by profound hypothermia. New and advanced SAAP mechanical components, pumps, catheters, and oxygenators will be tested for field use.

**CRD Support:** surgical suites; swine models; surgical technicians; fresh whole blood; pre/post-surgical care; animal housing; laboratory support







# 59th Medical Wing Clinical Research Division CLINICAL INVESTIGATIONS PROGRAM SPOTLIGHT ON GME/GHSE-SUPPORTED RESEARCH



## “Comparison of the Efficacy of REBOA and AAJT in a Swine Model of Uncontrolled Pelvic Bleeding”

**Principal Investigator:**  
Jason Rall, PhD

**Associate Investigators:**  
Ed Chagoy  
Jennifer Cox

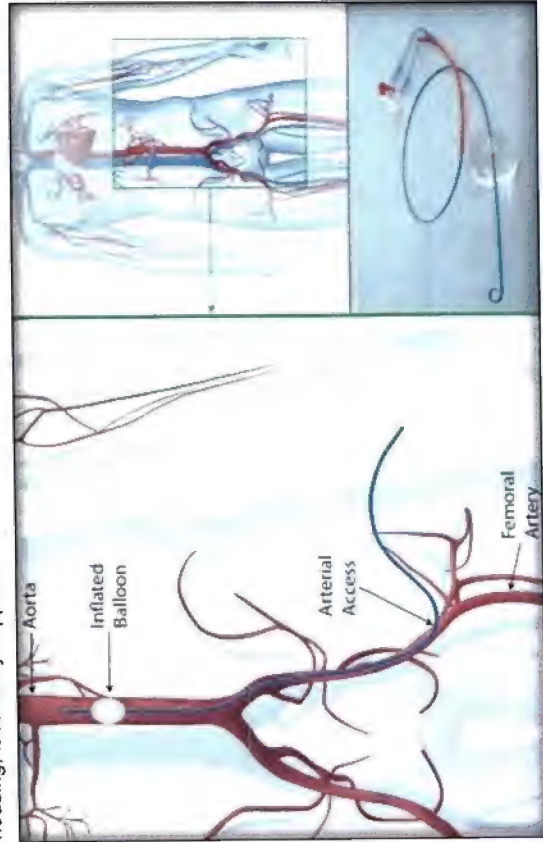
### Hypothesis:

This study will test whether the Abdominal Aortic and Junctional Tourniquet (AAJT) will be as effective as Resuscitative Endovascular Balloon Occlusion of the Aorta (REBOA) in achieving hemostasis in a swine model of pelvic hemorrhage and will determine the reperfusion injury produced by each treatment. AAJT application requires less time and skill than REBOA.

### Military Relevance:

Hemorrhage due to injuries to the pelvis and junctional areas remains a difficult problem on the battlefield. Effective methodologies to stop hemorrhage from these areas are needed.

**CRD Support:** surgical suites; swine models; surgical technicians; pre/post-surgical care; animal housing; laboratory support







# 59th Medical Wing Clinical Research Division

## CLINICAL INVESTIGATIONS PROGRAM

### SPOTLIGHT ON GME/GHSE-SUPPORTED RESEARCH

## "Brain Magnetic Resonance Imaging (MRI) and Neuropathological Effects of Hypobaric Exposure to 30,000ft and Hyperoxemic Exposure at Sea Level in a *Sus scrofa domestica* model"

**Principal Investigator:**  
Col Paul Sherman, MD

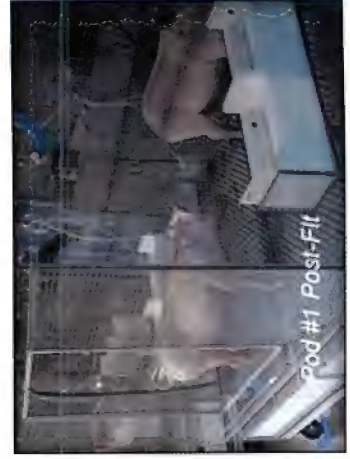
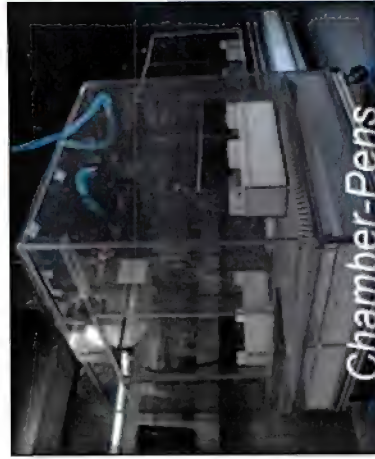
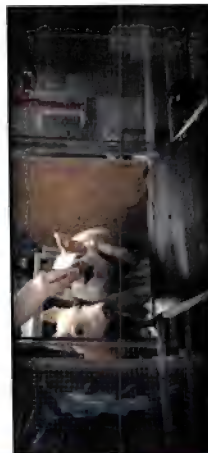
**Associate Investigators:**  
Capt P. Dana Peralla, MD  
Lt Col John Sladky, MD  
Stephen McGuire, MD

#### Description:

In a continuing effort to demonstrate white matter injury seen with hypobaric exposure in our high altitude pilots and aerospace physiology altitude chamber inside-observers, 36 swine in 3 limbs were exposed to pre-determined altitude and O<sub>2</sub> levels 6 times over 3 weeks and underwent 3 MRI scans each. Unlike previous studies, these swine are non-sedated and alert during exposure. Serologic analysis and necropsy with neuropathological evaluation were performed on each animal.

This study utilized miniature swine, a hypobaric chamber, and an MRI to safely and effectively demonstrate white matter injury (brain MRI changes) seen with high altitude (hypobaric) exposure in America's high altitude pilots and the observers who assist in the aerospace physiology chambers.

**CRD Support:** hypobaric chamber, specialized pre/post-flight animal cages; surgical suites; swine models; surgical technicians; pre/post-surgical care; pathology; laboratory support







## Calculating IRB Review & Approval Turn-Around Times

Column Heading Snapshot of Turn-Around Time Calculation Spreadsheet

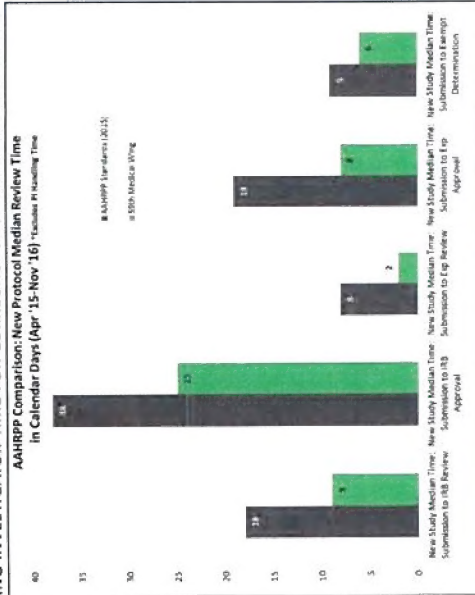
**EXAMPLE**  
Calculation Sheet  
(in work-days)

## AAHRPP Comparison: New Protocol Median Review Time in Calendar Days (Apr '15-Nov '16) \*Includes In-Waiting Time



**AAHRPP**  
Association for the Accreditation of  
Hospitals and Health Plans

TURN-AROUND TIME COMPARISON TO AAHRPP BENCHMARKS EXCLUDING INVESTIGATOR TIME FOR CORRECTIONS TO PROTOCOL DOCUMENTS







## 59th Medical Wing Clinical Research Division

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NICAL INVESTIGATIONS PROGRAM  
APSHOT OF OUR HUMAN RESEARCH STUDIES

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**59th Medical Wing Clinical Research Division**

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